

MCQ Questions on Ammeter and Voltmeter

1. Which of the following statements is true when connecting an ammeter in a circuit?

- A) The ammeter should be connected in parallel with the circuit component.
- B) The ammeter should be connected in series with the circuit component.
- C) The ammeter can be connected either in series or parallel.
- D) The ammeter should be connected directly across the power supply.

Answer: B) The ammeter should be connected in series with the circuit component.

2. How should a voltmeter be connected in a circuit to measure the voltage across a resistor?

- A) In series with the resistor
- B) In parallel with the resistor
- C) Directly to the power supply
- D) Either in series or parallel

Answer: B) In parallel with the resistor.

3. An ideal ammeter has:

- A) Zero resistance
- B) Infinite resistance
- C) Moderate resistance
- D) No impact on the circuit

Answer: A) Zero resistance.

4. An ideal voltmeter has:

- A) Zero resistance
- B) Infinite resistance
- C) The same resistance as the resistor being measured
- D) No impact on the circuit

Answer: B) Infinite resistance.

5. What happens if an ammeter is mistakenly connected in parallel with a circuit component?

- A) The ammeter will function correctly.
- B) The circuit component will stop working.
- C) The ammeter could be damaged.
- D) The circuit voltage will drop to zero.

Answer: C) The ammeter could be damaged.

6. The loading effect of a voltmeter is minimized by:

- A) Using a voltmeter with low resistance
- B) Using a voltmeter with high resistance
- C) Using a voltmeter in series with the component
- D) Using an ammeter instead

Answer: B) Using a voltmeter with high resistance.

7. To obtain the most accurate measurement of current in a circuit, the ammeter should:

- A) Have a resistance as low as possible
- B) Have a resistance as high as possible
- C) Be connected in parallel with the circuit component
- D) Be connected across the power supply

Answer: A) Have a resistance as low as possible.

8. Which of the following is correct when using a voltmeter to measure the voltage across a component?

- A) It must be connected in series with the component.
- B) It must be connected in parallel with the component.
- C) It must have a low resistance.

D) It should be connected directly to the power source.

Answer: B) It must be connected in parallel with the component.

9. What characteristic should an ammeter have for accurate current measurement?

A) High resistance

B) Low resistance

C) Variable resistance

D) No resistance

Answer: B) Low resistance.

10. The function of a voltmeter in a circuit is to:

A) Measure the current through a component.

B) Measure the voltage across a component.

C) Measure the resistance of a component.

D) Measure the power in the circuit.

Answer: B) Measure the voltage across a component.

11. If a voltmeter is connected in series with a resistor, the reading will be:

A) Accurate

B) Zero

C) Inaccurate

D) Maximum

Answer: C) Inaccurate.

12. Which of the following is a key property of an ideal voltmeter?

A) It draws a large current.

B) It has a high input resistance.

C) It has a low input resistance.

D) It should be placed in series with the circuit.

Answer: B) It has a high input resistance.

13. An ammeter measures the current in a circuit by being connected:

A) In parallel with the circuit.

B) In series with the circuit.

C) Directly to the power supply.

D) Across the resistor.

Answer: B) In series with the circuit.

14. The sensitivity of a voltmeter is determined by:

A) Its internal resistance.

B) Its range setting.

C) The current it draws.

D) Its position in the circuit.

Answer: A) Its internal resistance.

15. Why should an ammeter have very low resistance?

A) To avoid a voltage drop across it.

B) To increase the voltage drop across it.

C) To prevent the meter from being damaged.

D) To ensure accurate voltage measurement.

Answer: A) To avoid a voltage drop across it.

16. A voltmeter is typically connected in parallel because:

A) It measures the current flowing through a component.

B) It measures the potential difference across a component.

C) It needs to have a high current passing through it.

D) It decreases the overall resistance of the circuit.

Answer: B) It measures the potential difference across a component.

17. To avoid the loading effect, a voltmeter should have:

A) High sensitivity.

B) High internal resistance.

C) Low internal resistance.

D) High current rating.

Answer: B) High internal resistance.

18. If an ammeter is placed in parallel with a load, it could:

A) Give a correct current reading.

B) Give a voltage reading instead of current.

C) Overload and potentially get damaged.

D) Cause the circuit to open.

Answer: C) Overload and potentially get damaged.

19. When using a voltmeter, it is important to:

A) Ensure the voltmeter has low resistance.

B) Connect it in series with the circuit component.

C) Connect it in parallel with the circuit component.

D) Use it to measure current.

Answer: C) Connect it in parallel with the circuit component.

20. What would happen if a high-resistance ammeter is used in a circuit?

A) It would accurately measure the current.

B) It would cause a significant voltage drop, affecting the circuit operation.

C) It would measure voltage instead of current.

D) It would have no impact on the circuit.

Answer: B) It would cause a significant voltage drop, affecting the circuit operation.